Amana Technical Information—Gas Range

ARGS7650 P1130752N, P1130755N, P1130756N, P1130757N, P1130758N, P1130759N, P1130760N, P1130761N, P1130762N, P1130764N, P1130765N, P1130766N

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- This technical sheet replace RT2310003 Rev. 9.
- Refer to Service Manual RS2310002 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.
- Refer to Parts Manual RP2310032, RP2310045 and RP2310054 for part number information.

⚠ CAUTION

All safety information must be followed as provided in Service Manual RS2310002.

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven before servicing, unless testing requires it.

Models	**ARGS7650**
Power Source	
Electrical rating	120 VAC
Amperage	15 Amp maximum
Frequency	60 Hz
Water Column Pressure	
Natural	6 in. W.C.P.
LP/Propane	10 in. W.C.P.
Surface Burner (BTU Nat./LP)	
Small	5,000/4,000
Medium	9,100/8,000
Two large	12,500/10,000
Oven Burner (BTU Nat./LP)	
Bake	15,500/15,500
Insta-Broil™	14,000/13,000
Oven Interior Dimensions in. (cm)	
Height	16 (41)
Width	23 (58)
Depth	17 1/2 (44)
Product Exterior Dimensions in. (cm)	
Height overall	36 (119)
Width	30 1/8 (76)
Depth oven door closed with handle	23 (72)
Clearance oven door	20 (51)
Weight lbs. (kg)	
Approximately shipping weight	171 (78)
Features	
High performance die cast sealed burners	X
Exclusive one-piece cast iron burner grates	X
Frameless glass door with window	X
Interior oven light	X
Two oven racks—5 positions	X
Exclusive Insta-Broil™ system	X
Removable full width storage drawer	X
Self-cleaning porcelain oven with autolatch	X

Component Testing Procedures

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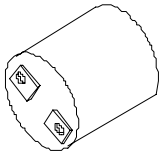
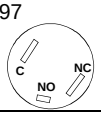
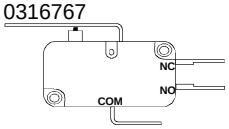
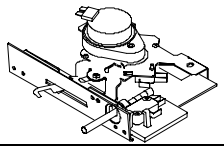
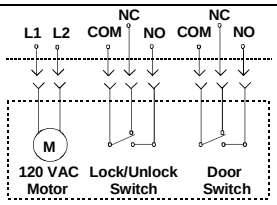
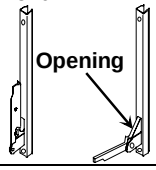
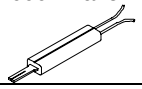
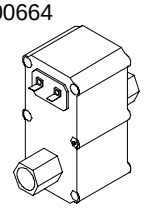
Illustration	Component	Test Procedure	Results
31823701 	Oven light socket	Remove one wire from receptacle and test resistance of terminals. Measure voltage at oven light.	Indicates continuity with bulb screwed in. 120 VAC, see wiring diagram for terminal identification. If no voltage is present at oven light, check wiring or light switches.
0301491	Rocker switch	Measure continuity of switch positions: Closed Open	 Continuity, if not replace. Infinite, if not replace.
0305797 	Door plunger switch	Remove switch from unit and measure the following points: C-NC C NO	 Plunger in infinite, Plunger out continuity. Plunger in continuity, Plunger out infinite.
0316767 	Door lock switch	Test for voltage at terminals to chassis when in bake, broil, or clean mode. COM to chassis Only when latch is engaged: NC to chassis	 120 VAC 120 VAC
31797301 31933401 	Autolatch assembly with door plunger switch	Disconnect wires and test for continuity per diagram. Refer to Parts Manual for correct autolatch switch associated with the correct manufacturing number.	
31933003 31933004	Limits	Oven limit Closed Open Fan limit Closed Open	See wiring diagram. 210°F 240°F 155°F 115°F
31715201–LH 31715202–RH 	Hinge	Carefully open the hinge fully, and insert a wooden dowel or screwdriver bit into opening. Remove top and bottom screws securing hinge. Slide hinge top towards rear of unit and guide hinge out through frame opening or storage drawer.	**⚠ CAUTION** Do not place hands in hinge area when oven door is removed. Hinge can snap closed and pinch hands or fingers.
309145–Broil 31939901-Broil 316223–Bake 31940001-Bake 	Norton ignitor	Test for voltage at terminals. Test for the amount of amperage in the circuit. (Ignitor may glow but not have sufficient amperage to open valve).	120 VAC 3.2 – 3.6 Amps If not replace.
0300664 	Dual thermal valve	Disconnect wiring to valve. Measure resistance on bake circuit. Measure resistance on broil circuit.	Continuity, If not replace. Continuity, If not replace. **⚠ WARNING** Do not attempt to open valve with 120 VAC.

Component Testing Procedures

⚠ WARNING

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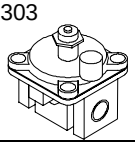
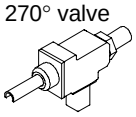
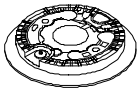
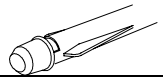
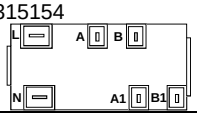
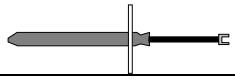
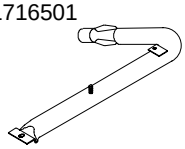
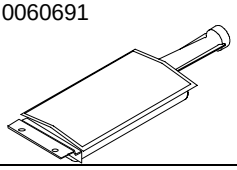
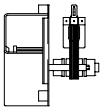
0042303 	Pressure regulator	Verify gas pressure (W.C.P.). If on LP service verify proper gas supply conversion.	6" Natural 10" LP/propane
0301361	Shut off valve	Check to verify gas supply is turned on.	
0315960— 5 K btu 0315961— 9 K btu 0315962— 12 K btu	270° valve 	Verify gas is supplied. Orifice adjusted for Natural or LP. Adjust set screw for simmer control.	
0316572	Spark 270° switch	Test for voltage at terminals. Disconnect wiring and check for continuity in LITE position.	120 VAC Continuity in LITE position.
0316773	Spark ignition electrode	Test for resistance of spark lead. Test ignitor to chassis.	Continuity No continuity from ignitor to chassis.
0315769— 5 K btu 0315768— 9 K btu 0315767— 12 K btu	Top surface burner 	Verify gas is supplied. Verify burner cap is positioned correctly.	Check for obstructions in burner ports.
	Venturi	Shutter settings Nominal Tol. ±	 .125" 1/8" .031" 1/32"
0315154 	Spark module 4 + 0	Test for voltage at terminals L and N. Check polarity and ground.	120 VAC See wiring diagram
0314907-All others 31968201-P1130766N 	Temperature sensor	Measure resistances.	Approximately 1100 Ω at room temperature 75°F.
31716501 	Bake burner	Verify gas is supplied. Orifice adjusted for Natural or LP. Check for obstructions or contamination in ports.	
0060691 	Broil burner	Verify gas is supplied. Proper orifice installed for Natural or LP. Check for damage to screen.	 Replace if punctured or torn.
308607 	ERC cooling blower	Verify supply voltage. Check continuity of terminals, and verify terminals are not shorted to chassis.	120 VAC Continuity

Component Testing Procedures

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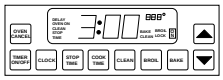
0315569 31944801 	ERC3 - Touchmatic electronic range control	**F1** - Shorted pad button. **F2** - Oven cavity over temperature. **F3** - Open circuit in oven temperature sensor circuit. **F4** - Shorted circuit in oven temperature circuit. **F5** - Defective watchdog circuit in control. **F7** - Failure of door lock switch sensing with door locked. **F9** - Failure of door lock switching sensing with door unlocked.	Verify actuator operation. Check sensor wiring, sensor, and temperature limiter. Check sensor resistance and wiring. Check sensor resistance and wiring. Replace ERC3. Check latch switch and door motor. Check latch switch, door motor, or door could possibly be propped open.
ERC3 Controlled	Quick test	Apply power to oven press and hold COOKTIME pad for approximately 5 seconds within the first 5 minutes of power up. (It must be the first pad touched.) Press and hold individual pads to activate. Activation of the pad will stop when the pad is released.	**Bake:** Energizes bake element **Broil:** Energizes broil element **Stop Time:** Beeper ON and micro ID # **Timer:** No function **Clock:** All display segments lite **Cook Time:** Checksum and sensor temp **Slew Pads:** Sequences through display segments **Clean:** Door lock codes 3=lock and unlock contacts closed 2=lock closed, unlock open 1=lock open, unlock closed 0=both open **Cancel:** Exit quick test mode If functions do not perform as specified, replace ERC
ERC3 Controlled	Oven temperature adjustment	Push ***BAKE*** pad. Push ***SLEW*** pad until an oven temperature greater than 500°F displays. Immediately push and hold ***BAKE*** pad until “00” displays, approximately 5 seconds. To decrease or increase oven temperature. Push ***SLEW*** pad until negative or positive numbers appear. Oven can be adjusted from -35° to +35°. To avoid over adjusting oven move temperature -5° each time. Push ***OVEN CANCEL*** button.	While increasing or decreasing oven temperature, this does not affect self-cleaning temperature.
ERC3 Controlled	Twelve hour off	Control will automatically cancel any cooking operation and remove all relay drives 12 hours after the last pad touch.	
ERC3 Controlled	Child lock out	Control input features will be disabled and display will indicate “OFF”, when ***BAKE*** and ***CLOCK*** are pushed simultaneously and held for 5 seconds. Control will return to normal operation by repeating the procedure.	

Component Testing Procedures

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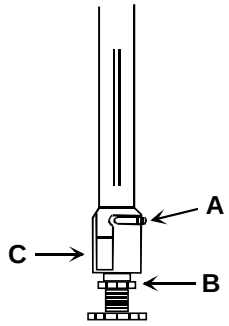
Converting from Natural Gas to LP Gas

Converting the Insta-Broil™

1. Remove or open oven door.
2. Remove screws securing Insta-Broil™ bracket.
3. Remove burner carefully, avoid damaging the ignitor to expose burner spud. Remove the #52 natural gas burner spud using a 5/16 socket wrench. Save #52 spud to reconvert if necessary in the future.
4. Install the #58 LP/propane spud (wired to inlet pipe).
5. Replace Insta-Broil™ burner and holding screws.

Converting Oven Burner for Use with LP/Propane

1. Remove storage drawer.



A—Air Shutter Screw
B—Orifice Hood
C—Air Shutter

2. Turn orifice hood clockwise until snug.
   - Do not over tighten orifice hoods. Orifice hoods can damage LP pin.
3. Replace cover plate and storage drawer.

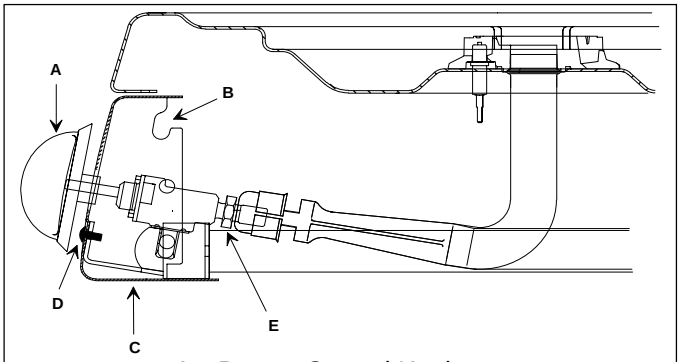
Adjusting Burner Flame

Properly adjusted burner flames are clean and blue with a distinct inner cone approximately ½ inch long.

- If burner flame is blowing or noisy, reduce airflow to burner.
- If burner flame is yellow and does not hold its shape, increase airflow to burner.

Converting Surface Burners for Use with LP/Propane

1. Remove 4 burner control knobs from range.
   - Exposes 2 screws on burner control panel.
2. Remove 2 screws from burner control panel.
   - Panel drops slightly after screws are removed.
3. Grasp bottom of burner control panel, gently lift and pull out panel until clear of burner valve stems.
   - After burner control panel clears valve stems, continue to roll panel until free from range. Set aside.
   - Gas valve and orifice hood are visible after burner control panel is removed.



A—Burner Control Knob
B—Pivot Point
C—Burner Control Panel
D—Screw
E—Orifice Hood

4. While facing range front, turn orifice hoods counterclockwise 1½ to 2 turns or until snug.
   - Use ½ inch open end or 90° offset open end wrench.
   - Do not over tighten orifice hoods. If orifice hoods are over tightened, gas supply can be cutoff or orifice hoods can damage LP pin.
5. Reassemble burner control panel after adjusting air shutter.

Converting Pressure Regulator for LP/Propane

1. Remove pressure regulator cap using a 7/8 inch wrench.
2. Reverse pressure regulator cap.
   - Cap must show “LP”.
3. Place pressure regulator cap on pressure regulator and tighten.

Wiring Diagram and Schematic

WARNING

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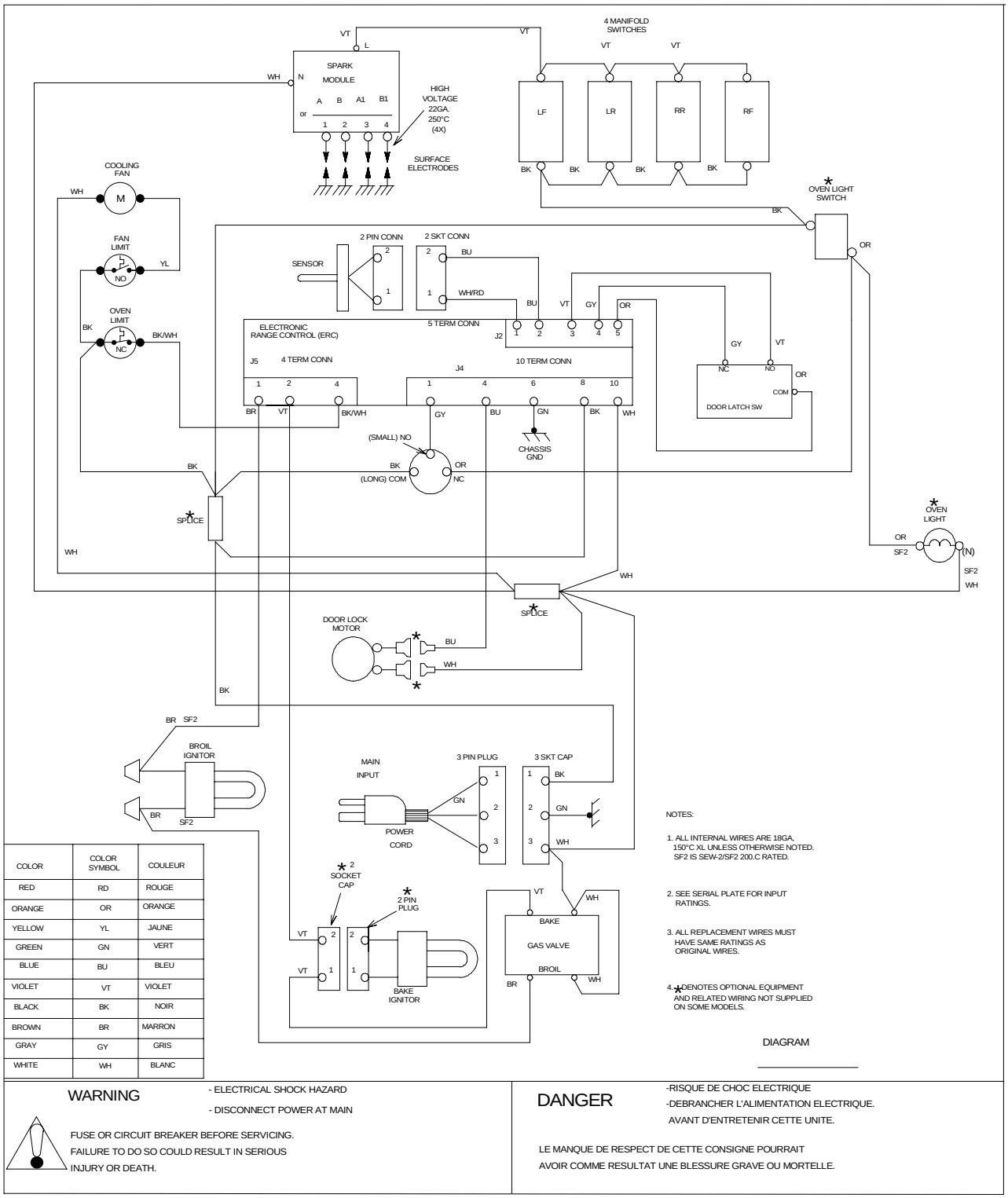

COLOR	COLOR SYMBOL	COULEUR
RED	RD	ROUGE
ORANGE	OR	ORANGE
YELLOW	YL	JAUNE
GREEN	GN	VERT
BLUE	BU	BLEU
VIOLET	VT	VIOLET
BLACK	BK	NOIR
BROWN	BR	MARRON
GRAY	GY	GRIS
WHITE	WH	BLANC

NOTES:

1. ALL INTERNAL WIRES ARE 18GA, 150°C XL UNLESS OTHERWISE NOTED. SF2 IS SEW-2/SF2 200.C RATED.
2. SEE SERIAL PLATE FOR INPUT RATINGS.
3. ALL REPLACEMENT WIRES MUST HAVE SAME RATINGS AS ORIGINAL WIRES.
4. * DENOTES OPTIONAL EQUIPMENT AND RELATED WIRING NOT SUPPLIED ON SOME MODELS.

DIAGRAM

WARNING
- ELECTRICAL SHOCK HAZARD
- DISCONNECT POWER AT MAIN

FUSE OR CIRCUIT BREAKER BEFORE SERVICING.
FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

DANGER
-RISQUE DE CHOC ELECTRIQUE
-DEBRANCHER L'ALIMENTATION ELECTRIQUE.
AVANT D'ENTRETENIR CETTE UNITE.

LE MANQUE DE RESPECT DE CETTE CONSIGNE POURRAIT AVOIR COMME RESULTAT UNE BLESSURE GRAVE OU MORTELLE.

ARGS7650 P1130752N, P1130755N, P1130756N, P1130757N, P1130758N, P1130759N, P1130760N, P1130761N, P1130762N

Wiring Diagram and Schematic

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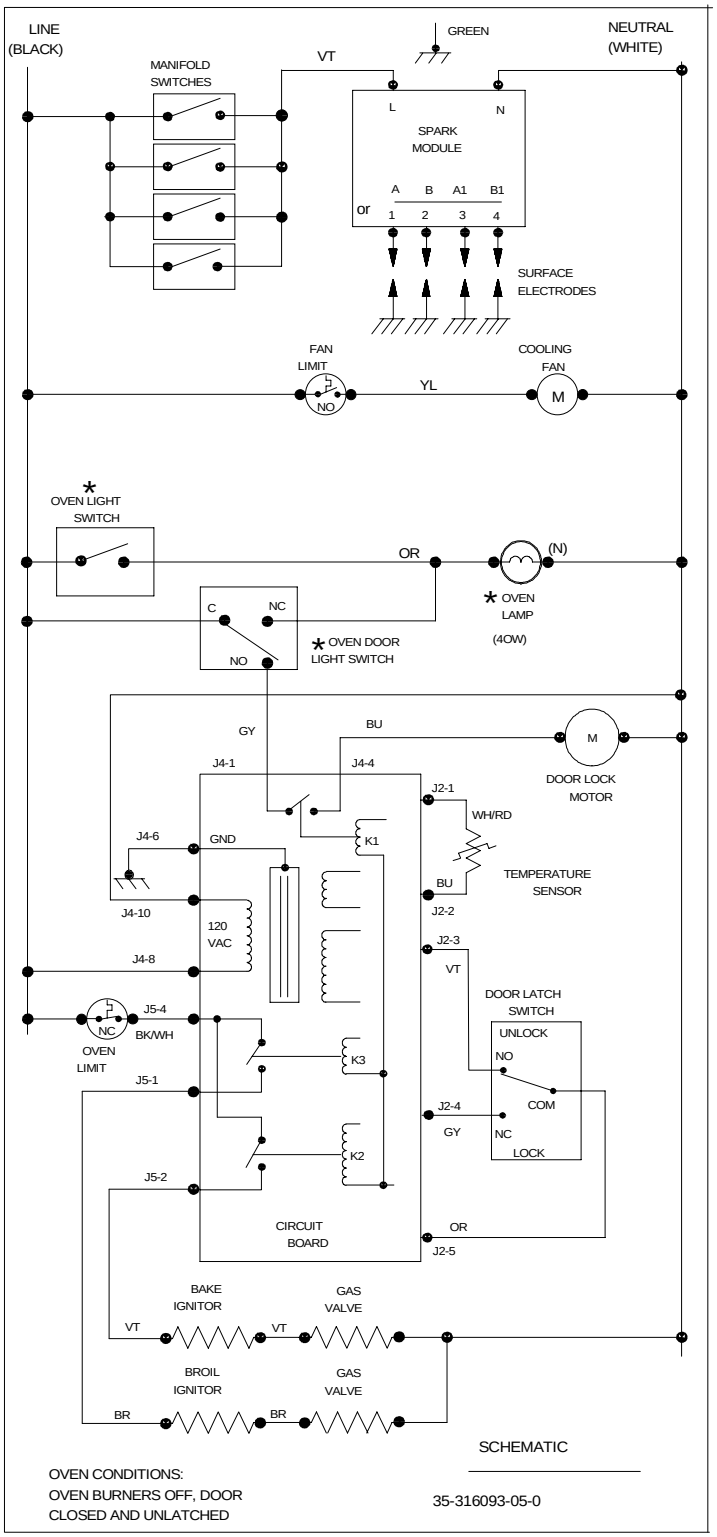

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Wiring Diagram and Schematic

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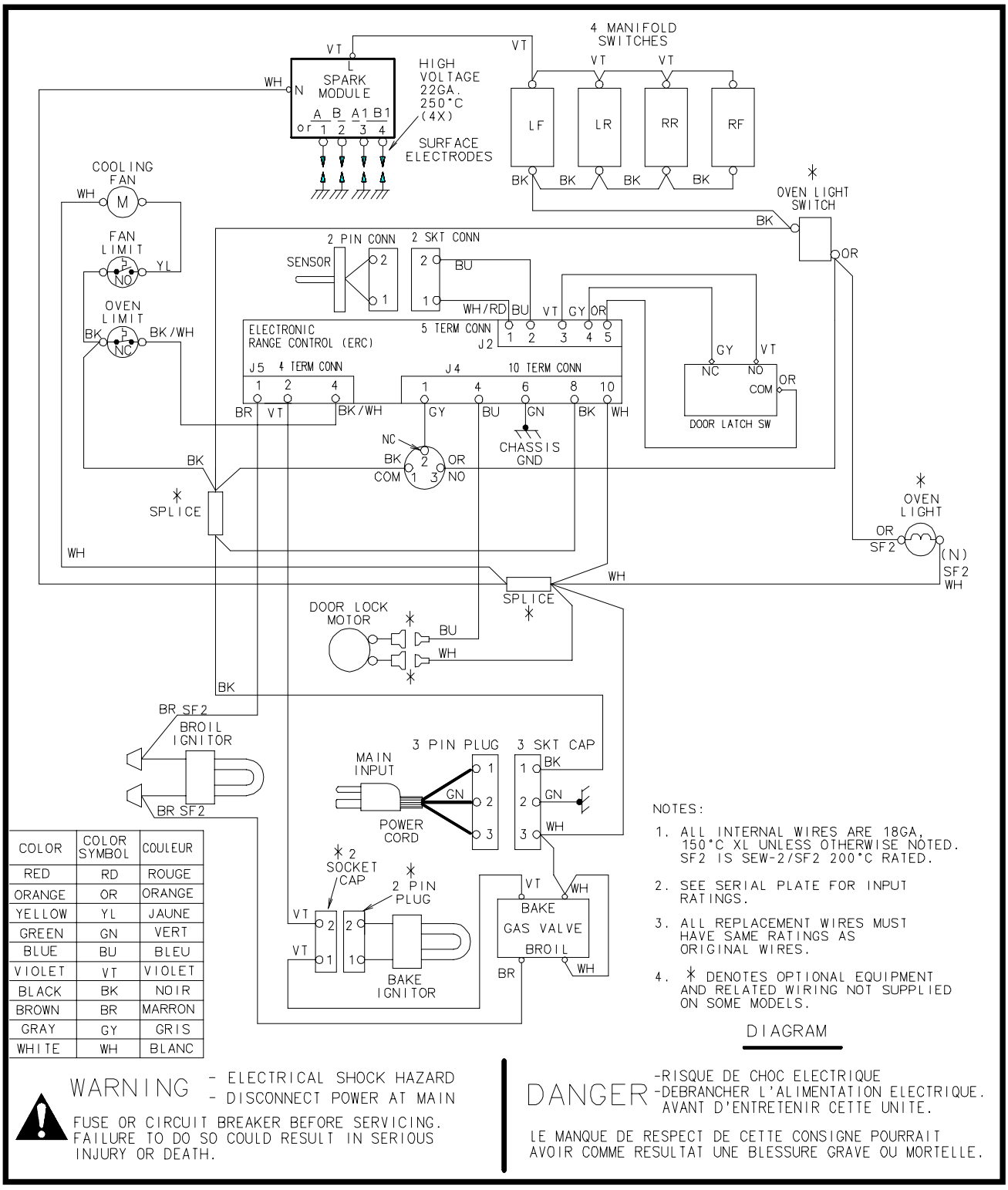
4 MANIFOLD SWITCHES
SPARK MODULE
HIGH VOLTAGE 22GA. 250°C (4X)
SURFACE ELECTRODES
LF
LR
RR
RF
COOLING FAN
FAN LIMIT
OVEN LIMIT
OVEN LIGHT SWITCH
2 PIN CONN
2 SKT CONN
SENSOR
ELECTRONIC RANGE CONTROL (ERC)
5 TERM CONN J2
J5 4 TERM CONN
J4 10 TERM CONN
DOOR LATCH SW
CHASSIS GND
SPLICE
OVEN LIGHT
DOOR LOCK MOTOR
BROIL IGNITOR
3 PIN PLUG
3 SKT CAP
MAIN INPUT
POWER CORD
2 SOCKET CAP
2 PIN PLUG
BAKE IGNITOR
BAKE GAS VALVE
BROIL
NOTES:
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ARGS7650 P1130764N

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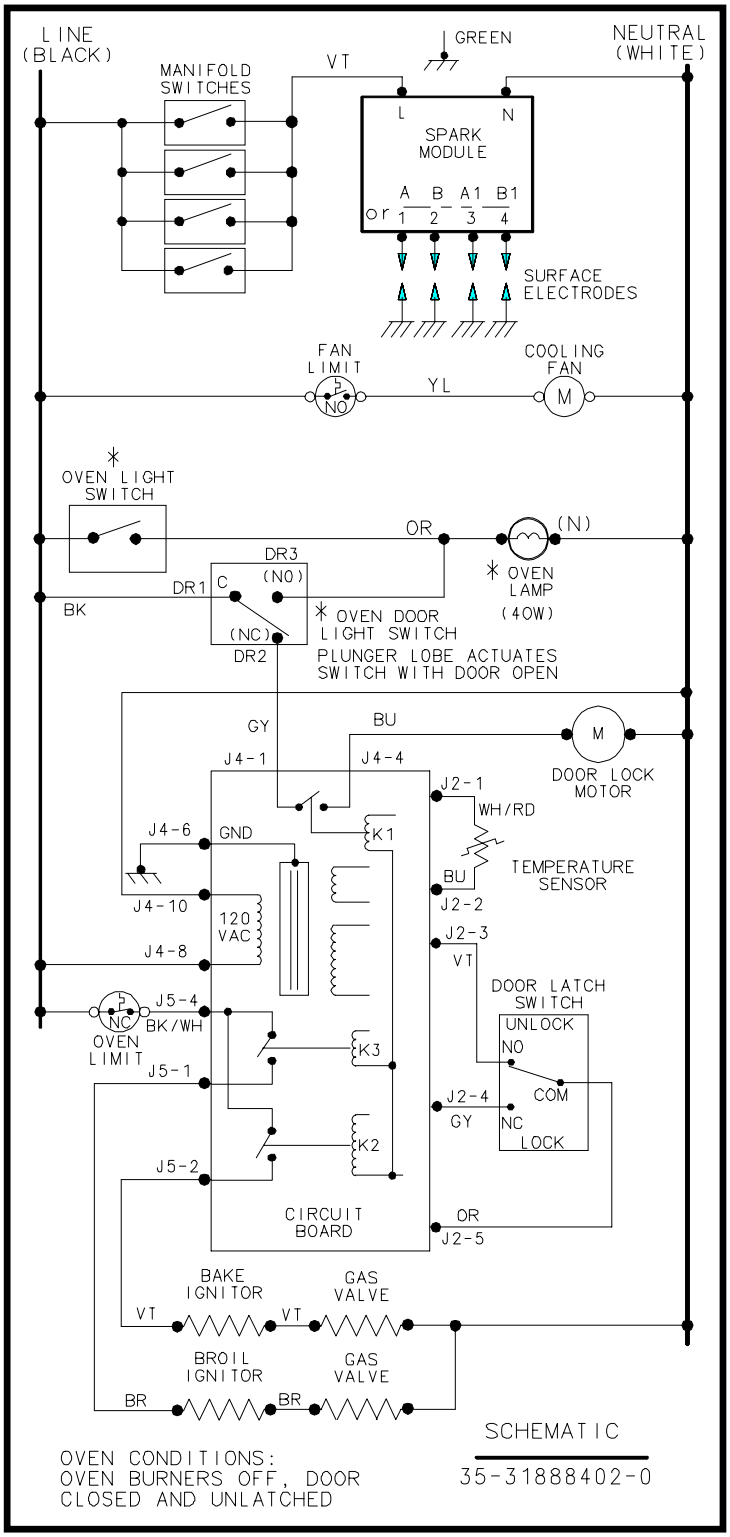

ARGS7650 P1130764N

Wiring Diagram and Schematic

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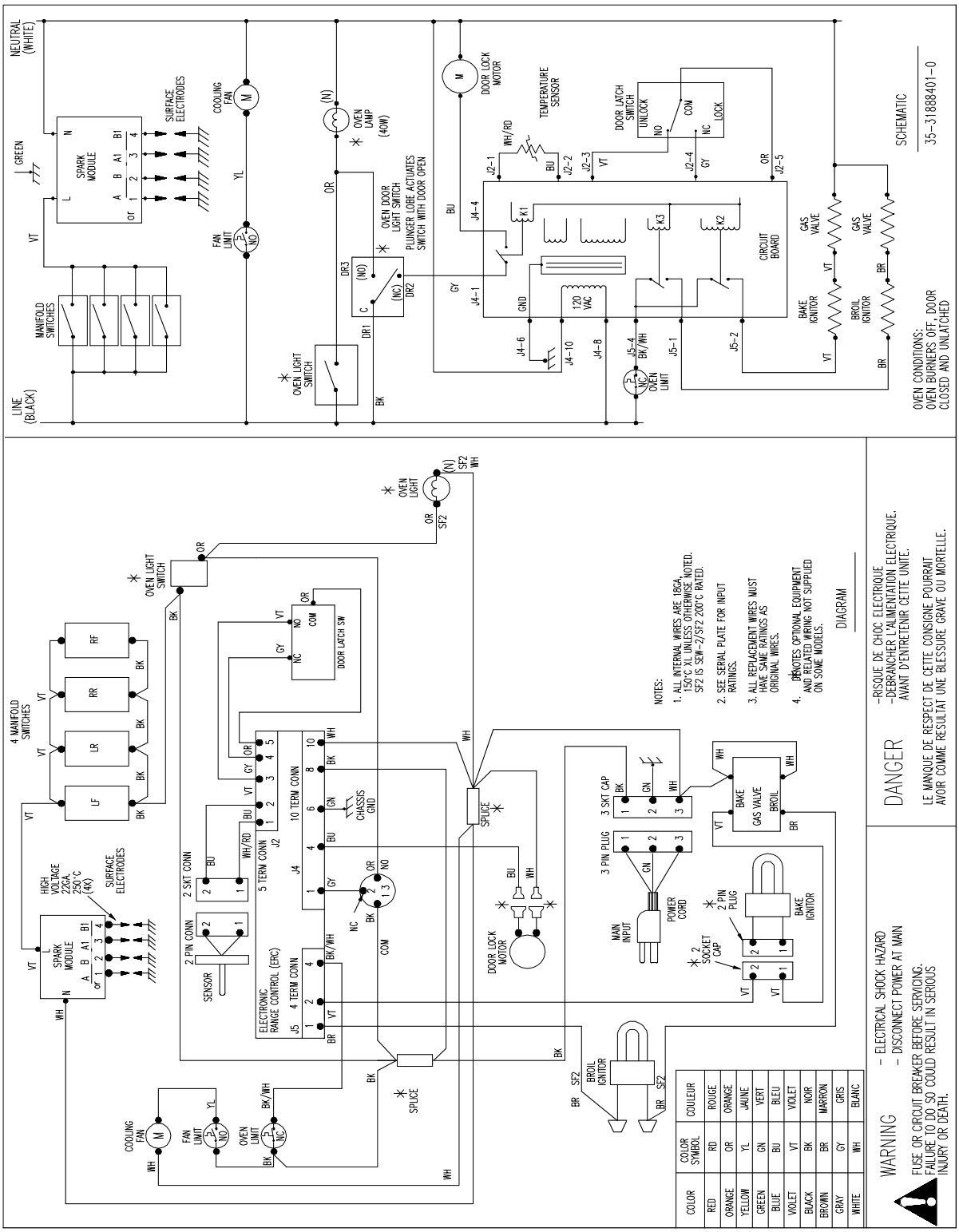
SCHEMATIC
35-31888401-0
OVEN CONDITIONS:
OVEN BURNERS OFF; DOOR
CLOSED AND UNLATCHED
DIAGRAM
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FUSE OR CIRCUIT BREAKER BEFORE SERVICING. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.
COLOR | COLOR SYMBOL | COULEUR
RED | RD | ROUGE
ORANGE | OR | ORANGE
YELLOW | YL | JAUNE
GREEN | GN | VERT
BLUE | BU | BLEU
VIOLET | VT | VIOLET
BLACK | BK | NOIR
BROWN | BR | MARRON
GRAY | GY | GRIS
WHITE | WH | BLANC

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